## REMARKS

Applicants herein editorially amend claims 2-6 and 8-16. The amendments to claims 2-6 and 8-16 do not raise new issues requiring further search or consideration by the Examiner. Entry and consideration of the claim amendments is respectfully requested.

Applicants herein amend claims 1 and 7. The amendments to claims 1 and 7 do not raise new issues requiring further search or consideration by the Examiner, since, as discussed below, the cited prior art does not disclose the features of the invention recited in claims 1 and 7. Entry and consideration of the claim amendments is respectfully requested.

Claims 1-16 have been examined on their merits, and are all the claims presently pending in the application.

1. Claims 1 and 7 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Cidon (U.S. Patent No. 5,309,433). Applicants respectfully traverse the rejection of claims 1 and 7 at least for the reasons set forth below.

To support a conclusion that a claimed invention lacks novelty under 35 U.S.C. § 102, a single source must teach all of the elements of a claim. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379 (Fed. Cir. 1986). A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). A single source must disclose all of the claimed elements arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Rejections under 35 U.S.C. § 102 are proper only when the

claimed subject matter is identically disclosed or described in the prior art. Thus, the cited reference must clearly and unequivocally disclose every element and limitation of the claimed invention.

Cidon discloses the use of, in the packet header of multicast packets, an ANR address that identifies a unicast connection between the host or source of a multicast session and one node of the multicast tree. The packet header of the multicast packets contains the TMM address that is used to further route the packets from the one node of the multicast tree to all destinations of the multicast tree. As discussed by Cidon, ANR routing specifies successive links in the routing field, and these successive links are used to deliver a packet to a single destination address. Successive links are specified in the routing order, and are stripped away as the message progresses through the network to single destination address. *See* col. 1, lines 35-45 of Cidon et al. Cidon also discloses TMM routing that uses predefined multicast trees to connect a predefined set of user stations. TMM uses a common address that defines the multicast tree. *See* col. 1, lines 50-65 of Cidon. TMM also uses a hop count to determine how many of the nodes in the tree actually receive the packet. *See* col. 7, lines 1-5 of Cidon. The multicasting disclosed by Cidon relies on a single TMM address, which means that Cidon still suffers from all drawbacks of a host-group multicast implementation: i) the requirement to maintain the state for each multicast group; ii) large numbers of join and leave messages flooding the network, and iii) scalability. Lengthy packet headers are clearly not an issue in Cidon. Moreover, Cidon does not disclose any mechanism to compress the packet header in connectionless implementations of multicasting.

Nonwithstanding the Examiner's assertions in the Response to Arguments section of the April 9, 2003 Final Office Action, Cidon fails to teach or suggest several aspects of the invention

recited in claim 1. The Examiner's citation to col. 2, lines 25-32 of Cidon does not support the Examiner's argument that Cidon teaches or suggests detecting a common prefix in at least two different destination addresses. In the cited passage, Cidon discloses that automatic network routing (ANR) labels and a tree multicast mode (TMM) tree label are concatenated into the routing field of a packet. *See* Figure 6 of Cidon. There is no teaching of suggestion that the concatenated information in the routing field has been derived by a detection of a common prefix in at least two different destination addresses, as recited in claim 1. As disclosed by Cidon, for a tree multicast, each adapter has the identical address. *See* col. 6, lines 45-48 of Cidon. Moreover, Figure 6 of Cidon shows a whole series of ANR labels concatenated to the TMM tree label. There is no teaching or suggestion in Cidon of somehow compressing the ANR labels if a common prefix was present. Instead, Cidon simply discloses concatenating all the ANR labels together. *See* col. 7, lines 32-35 of Cidon. The Examiner has not identified any detailed teaching in Cidon of the detection and compression of common prefixes.

The Examiner's rebuttal argument in the Response to Arguments section of the April 9, 2003 Final Office Action that Cidon would have to detect common suffixes lacks support. For example, the Examiner's statement that the "device of Cidon must be able to detect the path that the multicast packets all have in common to send the packets to the unique end users" is technically incorrect. *See* pages 7-8 of the April 9, 2003 Final Office Action. In the combination ANR/TMM routing disclosed by Cidon, there is no divergence in the route from the source node to the destination node that is included in a predefined TMM tree. Thus, there is no need to detect a common path to all the nodes of the multicast tree, since the packet only needs to be sent to only a selected destination node,

which also happens to be part of the multicast tree. The multicast tree takes care of distributing the packet from the destination node (which first received the packet) to the remaining nodes that comprise the predefined multicast tree, which all have the same address. The technical mistake made by the Examiner is the incorrect assumption that the predefined multicast tree disclosed by Cidon is somehow equivalent to Applicants' invention of a compound address that distributes packets to multiple destination addresses. In Applicants' invention, the compound address represents a multitude of different destination addresses compressed together, whereas the predefined multicast tree relies upon a single common address for packet forwarding. Cidon specifically teaches away from compression by concatenating several ANR labels to a TMM label. *See* Figure 6 of Cidon. Concatenation simply means to link together, as in a chain. The ANR labels in the packet header are linked together, which allows them to be stripped away as the packet progresses through the network. *See* col. 1, lines 39-43 of Cidon. There are no methods or algorithms disclosed in Cidon that teach compressing the number of ANR labels in the packet header. Otherwise, if Cidon did actually teach compression, there would be some disclosure on how to uncompress the ANR labels and strip away used ANR labels as the packet progresses through the network.

A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The fact that a certain characteristic may occur or be present in the prior art is not enough to establish the inherency of that characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). In order to establish inherency, extrinsic evidence

must make clear that the missing descriptive matter is necessarily present in the reference and that persons of ordinary skill would so recognize. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). Inherency cannot be established by probabilities or possibilities, and the fact that a certain thing may result from a given set of circumstances is insufficient to establish inherency. *Id.* Moreover, the Examiner is required to provide a basis in fact and/or technical reasoning to support his argument that the inherent characteristics are present in the teachings of the applied reference. *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Based on the preceding discussion regarding Cidon's lack of disclosure with respect to detecting common prefixes between different destination addresses, it is fairly clear that Cidon discloses no such detection of common prefixes in different destination addresses. Furthermore, the Examiner has failed to provide even rudimentary support to prove that such detection would be inherent in the cited prior art.

In addition, Cidon lacks any teaching or suggestion of generating a suffix list, as recited in claim 1. Although the Examiner argues that Cidon allegedly discloses multicasting to several destination addresses, it is clear from Cidon that only one destination address receives the broadcast, i.e., the multicast tree address stored by the adapter. *See* col. 6, lines 45-48 of Cidon. This tree address is the tree address (64) shown in Figure 6 of Cidon. Cidon fails to teach or suggest that a packet having a routing field as shown in Figure 6 is delivered to *any other destination address* other than the tree address shown in Figure 6. There is no teaching or suggestion of generating a suffix list composed of multiple destination addresses, since Cidon only multicasts to what is in essence a single destination address. For example, if two different destination addresses were part of two different multicast trees, Cidon would require two different packets having routing labels composed

of ANR labels and different TMM tree labels. In contrast, the present invention could send a packet to the two different destination addresses with a single packet due to the compound destination address.

The Examiner's rebuttal argument in the Response to Arguments section of the April 9, 2003 Final Office Action that the TMM address be viewed as a series of suffixes is clearly wrong, especially since Cidon explicitly states that TMM uses the same address for members of the predefined multicast tree. Claim 1 recites that the suffix list represents the non-identical portions of the destination addresses of hosts that have a common prefix in their destination addresses. A proper § 102(b) analysis requires the Examiner to find, in the cited prior art, the identical subject matter recited in claims at issue. That analysis is clearly missing from the April 9, 2003 Final Office Action, as the Examiner has failed to cite any relevant portion of Cidon that discloses the suffix list as recited in claim 1.

Finally, Cidon fails to teach or suggest the addition of a common prefix to a generated suffix list, as recited in claim 1. Again, in Figure 6 of Cidon, the plurality of ANR labels is simply concatenated to the TMM tree label. There is no disclosure that the TMM tree label is somehow equivalent to the generated suffix list, and there is no disclosure that the concatenated series of ANR labels is a common prefix, as recited in claim 1. Therefore, Applicants believe that the Examiner has not met the required showing of a single source teaching all of the elements of a claim, as required by *Hybritech* and *Richardson*.

Thus, Applicants believe that claim 1 is allowable over Cidon, and further believe that claims 11-13 are allowable as well, at least by virtue of their dependency from claim 1.

Independent claim 7 has recitations similar to claim 1, e.g., detection of common prefixes and suffix generation. Applicants believe that claim 7 is allowable at least for the same reasons as claim 1. Applicants further believe that claims 14-16 are allowable as well, at least by virtue of their dependency from claim 7.

2. Claims 2, 4, 5, 6, 8 and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cidon in view of Johnson et al. (U.S. Patent No. 6,247,059). Applicants respectfully traverse the rejection of claims 2, 4, 5, 6, 8 and 10 at least for the reasons set forth below.

The initial burden of establishing that a claimed invention is *prima facie* obvious rests on the USPTO. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). To make its *prima facie* case of obviousness, the USPTO must satisfy three requirements:

1. The prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated to artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988).
2. The proposed modification of the prior art must have had a reasonable expectation of success, and that determined from the vantage point of the artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209 (Fed. Cir. 1991).
3. The prior art reference or combination of references must teach or suggest all the

limitations of the claims. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, the nature of a problem to be solved. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Alternatively, the motivation may be implicit from the prior art as a whole, rather than expressly stated. *Id.* Regardless if the USPTO relies on an express or an implicit showing of motivation, the USPTO is obligated to provide particular findings related to its conclusion, and those findings must be clear and particular. *Id.* A broad conclusionary statement, standing alone without support, is not "evidence." *Id.; see also, In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

In addition, a rejection cannot be predicated on the mere identification of individual components of claimed limitations. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *Id.*

Claims 2, 4, 5, 6, 8 and 10 depend from claim 1, and therefore include all the recitations of claim 1 by virtue of their dependency.

For claims 2, 4, 5, 6, 8 and 10, the Examiner acknowledges that Cidon fails to disclose that the network system is connectionless. The Examiner attempts to overcome the deficiencies of Cidon by combining it with Johnson et al. Applicants note that the Examiner has not cited Johnson et al. for any teaching of the detection of common prefixes, the generation of suffix lists and the addition

of the common prefixes and suffix lists together to form a compound destination address, as recited in claim 1 and included in claims 2, 4, 5, 6, 8 and 10 via dependency.

The combination of Cidon and Johnson et al. fails to teach or suggest the detection of common prefixes, the generation of suffixes and the addition of the common prefixes and suffixes together to form a compound destination address, as recited in claim 1 and included in claims 2, 4, 5, 6, 8 and 10 via dependency. At best, the combination of Cidon and Johnson et al. discloses a method of creating packet headers for a connectionless network that use ANR labels to send a packet to a destination address of a node that is included in a predefined multicast tree, and then concatenating the ANR labels with a TMM tree label so that the packet is distributed within the predefined multicast tree. The combination of Cidon and Johnson et al. fails to teach or suggest the detection of a common prefix in at least two different destination addresses. Instead, the combination of Cidon and Johnson et al. discloses that automatic network routing (ANR) labels and a tree multicast mode (TMM) tree label are concatenated into the routing field of a packet. *See* Figure 6 of Cidon. There is no teaching of suggestion that the concatenated information in the routing field has been derived by a detection of a common prefix in at least two different destination addresses, as recited in claim 1 and included in claims 2, 4, 5, 6, 8 and 10 via dependency. As disclosed by the combination of Cidon and Johnson et al., for a tree multicast, each adapter has the identical address. *See* col. 6, lines 45-48 of Cidon. Moreover, the combination of Cidon and Johnson et al. shows a whole series of ANR labels concatenated to the TMM tree label. See Figure 6 of Cidon. There is no teaching or suggestion in the combination of Cidon and Johnson et al. of somehow compressing the ANR labels if a common prefix was present. Instead, the combination

of Cidon and Johnson et al. simply discloses concatenating all the ANR labels together. *See* col. 7, lines 32-35 of Cidon. The Examiner has not identified any detailed teaching in the combination of Cidon and Johnson et al. of the detection and compression of common prefixes.

In the combination ANR/TMM routing disclosed by the combination of Cidon and Johnson et al., there is no divergence in the route from the source node to the destination node that is included in a predefined TMM tree. Thus, there is no need to detect a common path to all the nodes of the multicast tree, since the packet only needs to be sent to only a selected destination node, which also happens to be part of the multicast tree. The multicast tree takes care of distributing the packet from the destination node (which first received the packet) to the remaining nodes that comprise the predefined multicast tree, which all have the same address. The Examiner makes the incorrect assumption that the predefined multicast tree disclosed by the combination of Cidon and Johnson et al. is somehow equivalent to Applicants' invention of a compound address that distributes packets to multiple destination addresses. In Applicants' invention, the compound address represents a multitude of different destination addresses compressed together, whereas the predefined multicast tree relies upon a single common address for packet forwarding. The combination of Cidon and Johnson et al. specifically teaches away from compression by concatenating several ANR labels to a TMM label. *See* Figure 6 of Cidon. Concatenation simply means to link together, as in a chain. The ANR labels in the packet header are linked together, which allows them to be stripped away as the packet progresses through the network. *See* col. 1, lines 39-43 of Cidon. There are no methods or algorithms disclosed in the combination of Cidon and Johnson et al. that teach compressing the number of ANR labels in the packet header. Otherwise, if the combination of Cidon and Johnson

et al. did actually teach compression, there would be some disclosure on how to uncompress the ANR labels and strip away used ANR labels as the packet progresses through the network.

In addition, the combination of Cidon and Johnson et al. lacks any teaching or suggestion of generating a suffix list, as recited in claim 1 and included in claims 2, 4, 5, 6, 8 and 10 via dependency. Although the Examiner argues that the combination of Cidon and Johnson et al. allegedly discloses multicasting to several destination addresses, it is clear that only one destination address receives the broadcast, i.e., the multicast tree address stored by the adapter. *See* col. 6, lines 45-48 of Cidon. This tree address is the tree address (64) shown in Figure 6 of Cidon. The combination of Cidon and Johnson et al. fails to teach or suggest that a packet having a routing field as shown in Figure 6 of Cidon is delivered to *any other destination address* other than the tree address shown in Figure 6. There is no teaching or suggestion of generating a suffix list composed of multiple destination addresses, since the combination of Cidon and Johnson et al. only multicasts to what is in essence a single destination address. For example, if two different destination addresses were part of two different multicast trees, the combination of Cidon and Johnson et al. would require two different packets having routing labels composed of ANR labels and different TMM tree labels. In contrast, the present invention could send a packet to the two different destination addresses with a single packet due to the compound destination address.

The Examiner's argument that the TMM address be viewed as a series of suffixes is clearly wrong, especially since the combination of Cidon and Johnson et al. explicitly states that TMM uses the same address for members of the predefined multicast tree. In contrast, claim 1 recites that the

suffix list represents the non-identical portions of the destination addresses of hosts that have a common prefix in their destination addresses.

Finally, the combination of Cidon and Johnson et al. fails to teach or suggest the addition of a common prefix to a generated suffix list, as recited in claim 1. Again, in the combination of Cidon and Johnson et al., the plurality of ANR labels is simply concatenated to the TMM tree label. *See* Figure 6 of Cidon. There is no disclosure that the TMM tree label is somehow equivalent to the generated suffix list, and there is no disclosure that the concatenated series of ANR labels is a common prefix, as recited in claim 1 and included in claims 2, 4, 5, 6, 8 and 10 via dependency. Therefore, Applicants believe that the Examiner has not met the "all limitations" prong of a *prima facie* case of obviousness, as required by *In re Vaeck.*

The Examiner has not made a proper showing of motivation, as required under *In re Dembiczak* and *In re Zurko*. Dobbins et al. (U.S. Patent Publication No. 2002/0029288 A1) does not qualify as prior art (i.e., filing date of June 15, 2001, nearly two years later than Applicants' priority date). Srinivasan et al. (*Faster IP Lookups Using Controlled Prefix Expansion*) is not cited as prior art against claims 2, 4, 5, 6, 8 and 10. Therefore both these references are irrelevant with respect to motivation to combine Cidon with Johnson et al. The Examiner has acknowledged that Cidon does not disclose connectionless networks, but since Johnson et al. do disclose such networks, it would have been obvious to combine. This reason is inadequate under *In re Dembiczak* and *In re Zurko*. The Examiner is obligated to provide particular findings related to its conclusion on motivation, and those findings must be clear and particular. A broad conclusionary statement, such as the Examiner's statement on page 9 of the April 9, 2003 Final Office Action, standing alone

without support, is not "evidence." The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680 (Fed. Cir. 1990) (holding that, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so"); *see also In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992). The Examiner has cited nothing in either reference that would provide any motivation to combine the two references, especially in light of the analysis regarding the "all limitations" prong of a *prima facie* case of obviousness, where Applicants have clearly shown that the combination of Cidon and Johnson et al. does not teach or suggest all the recitations of claims 1, 2, 4, 5, 6, 8 and 10. Applicants believe that the Examiner has not met the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Thus, Applicants believe that claims 2, 4, 5, 6, 8 and 10 are allowable over the combination of Cidon and Johnson et al., at least by virtue of their dependency from claim 1 and for the reasons discussed above.

3. Claim 3 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cidon in view of Alkhatib (U.S. Patent No. 6,430,623). Applicants respectfully traverse the rejection of claim 3 at least for the reasons set forth below.

The Examiner acknowledges that Cidon fails to teach or suggest the use of IP addresses. The Examiner attempts to overcome the deficiencies of Cidon by combining it with Alkhatib. Applicants note that the Examiner has not cited Alkhatib for any teaching of the detection of common prefixes,

the generation of suffix lists and the addition of the common prefixes and suffix lists together to form a compound destination address, as recited in claim 1 and included in claim 3 via dependency.

The combination of Cidon and Alkhatib fails to teach or suggest the detection of common prefixes, the generation of suffixes and the addition of the common prefixes and suffixes together to form a compound destination address, as recited in claim 1 and included in claim 3 via dependency. At best, the combination of Cidon and Alkhatib discloses a method of creating IP address packet headers that use ANR labels to send a packet to a destination address of a node that is included in a predefined multicast tree, and then concatenating the ANR labels with a TMM tree label so that the packet is distributed within the predefined multicast tree. The combination of Cidon and Alkhatib fails to teach or suggest the detection of a common prefix in at least two different destination addresses. Instead, the combination of Cidon and Alkhatib discloses that automatic network routing (ANR) labels and a tree multicast mode (TMM) tree label are concatenated into the routing field of a packet. *See* Figure 6 of Cidon. There is no teaching of suggestion that the concatenated information in the routing field has been derived by a detection of a common prefix in at least two different destination addresses, as recited in claim 1 and included in claim 3 via dependency. As disclosed by the combination of Cidon and Alkhatib, for a tree multicast, each adapter has the identical address. *See* col. 6, lines 45-48 of Cidon. Moreover, the combination of Cidon and Alkhatib shows a whole series of ANR labels concatenated to the TMM tree label. See Figure 6 of Cidon. There is no teaching or suggestion in the combination of Cidon and Alkhatib of somehow compressing the ANR labels if a common prefix was present. Instead, the combination of Cidon and Alkhatib simply discloses concatenating all the ANR labels together. *See* col. 7, lines

32-35 of Cidon. The Examiner has not identified any detailed teaching in the combination of Cidon and Alkhatib of the detection and compression of common prefixes.

In the combination ANR/TMM routing disclosed by the combination of Cidon and Alkhatib, there is no divergence in the route from the source node to the destination node that is included in a predefined TMM tree. Thus, there is no need to detect a common path to all the nodes of the multicast tree, since the packet only needs to be sent to only a selected destination node, which also happens to be part of the multicast tree. The multicast tree takes care of distributing the packet from the destination node (which first received the packet) to the remaining nodes that comprise the predefined multicast tree, which all have the same address. The Examiner makes the incorrect assumption that the predefined multicast tree disclosed by the combination of Cidon and Alkhatib is somehow equivalent to Applicants' invention of a compound address that distributes packets to multiple destination addresses. In Applicants' invention, the compound address represents a multitude of different destination addresses compressed together, whereas the predefined multicast tree relies upon a single common address for packet forwarding. The combination of Cidon and Alkhatib specifically teaches away from compression by concatenating several ANR labels to a TMM label. *See* Figure 6 of Cidon. Concatenation simply means to link together, as in a chain. The ANR labels in the packet header are linked together, which allows them to be stripped away as the packet progresses through the network. *See* col. 1, lines 39-43 of Cidon. There are no methods or algorithms disclosed in the combination of Cidon and Alkhatib that teach compressing the number of ANR labels in the packet header. Otherwise, if the combination of Cidon and Alkhatib did actually teach compression, there would be some disclosure on how to uncompress the ANR labels

and strip away used ANR labels as the packet progresses through the network.

In addition, the combination of Cidon and Alkhatib lacks any teaching or suggestion of generating a suffix list, as recited in claim 1 and included in claim 3 via dependency. Although the Examiner argues that the combination of Cidon and Alkhatib allegedly discloses multicasting to several destination addresses, it is clear that only one destination address receives the broadcast, i.e., the multicast tree address stored by the adapter. *See* col. 6, lines 45-48 of Cidon. This tree address is the tree address (64) shown in Figure 6 of Cidon. The combination of Cidon and Alkhatib fails to teach or suggest that a packet having a routing field as shown in Figure 6 of Cidon is delivered to *any other destination address* other than the tree address shown in Figure 6. There is no teaching or suggestion of generating a suffix list composed of multiple destination addresses, since the combination of Cidon and Alkhatib only multicasts to what is in essence a single destination address. For example, if two different destination addresses were part of two different multicast trees, the combination of Cidon and Alkhatib would require two different packets having routing labels composed of ANR labels and different TMM tree labels. In contrast, the present invention could send a packet to the two different destination addresses with a single packet due to the compound destination address.

The Examiner's argument that the TMM address be viewed as a series of suffixes is clearly wrong, especially since the combination of Cidon and Alkhatib explicitly states that TMM uses the same address for members of the predefined multicast tree. In contrast, claim 3 recites that the suffix list represents the non-identical portions of the destination addresses of hosts that have a common prefix in their destination addresses.

Finally, the combination of Cidon and Alkhatib fails to teach or suggest the addition of a common prefix to a generated suffix list, as recited in claim 1 and included in claim 3. Again, in the combination of Cidon and Alkhatib, the plurality of ANR labels is simply concatenated to the TMM tree label. *See* Figure 6 of Cidon. There is no disclosure that the TMM tree label is somehow equivalent to the generated suffix list, and there is no disclosure that the concatenated series of ANR labels is a common prefix, as recited in claim 1 and included in claim 3. Applicants believe that the Examiner has not met the "all limitations" prong of a *prima facie* case of obviousness, as required by *In re Vaeck.*

The Examiner has not made a proper showing of motivation, as required under *In re Dembiczak* and *In re Zurko.* Srinivasan et al. (*Faster IP Lookups Using Controlled Prefix Expansion*) is not cited as prior art against claim 3, and Srinivasan et al. disclose the expansion of prefixes, not the compression of prefixes. Therefore, this reference is irrelevant with respect to motivation to combine Cidon with Alkhatib. The Examiner has acknowledged that Cidon does not disclose the use of IP addresses, but since Alkhatib does disclose IP addresses, it would have been obvious to combine. This reason is inadequate under *In re Dembiczak* and *In re Zurko.* The Examiner is obligated to provide particular findings related to its conclusion on motivation, and those findings must be clear and particular. A broad conclusionary statement, such as the Examiner's statement on page 10 of the April 9, 2003 Final Office Action, standing alone without support, is not "evidence." The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680 (Fed. Cir. 1990) (holding that, although a prior art

device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so"); *see also In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992). The Examiner has cited nothing in either Cidon and Alkhatib that would provide any motivation to combine the two references, especially in light of the analysis regarding the "all limitations" prong of a *prima facie* case of obviousness, where Applicants have clearly shown that the combination of Cidon and Alkhatib does not teach or suggest all the recitations of claim 3. Applicants believe that the Examiner has not met the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Thus, Applicants believe that claim 3 is allowable over the combination of Cidon and Alkhatib, at least by virtue of its dependency from claim 1 and for the reasons discussed above.

4. Claim 9 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cidon in view of Johnson and in further view of Alkhatib. Applicants respectfully traverse the rejection of claim 9 at least for the reasons set forth below.

Claim 9 indirectly depends from claim 1, and therefore includes all the recitations of claim 1 by virtue of its dependency. The Examiner acknowledges that the combination of Cidon and Johnson et al. fails to teach or suggest the use of routing tables. The Examiner attempts to overcome the deficiencies of the combination of Cidon and Johnson et al. by combining it with Alkhatib. Alkhatib is cited only for its teaching of routing tables. Applicants note that the Examiner has not cited Alkhatib for any teaching of the detection of common prefixes, the generation of suffixes and the addition of the common prefixes and suffixes together to form a compound destination address,

as recited in claim 1 and included in claim 9 via dependency.

The combination of Cidon, Johnson et al. and Alkhatib fails to teach or suggest the detection of common prefixes, the generation of suffixes and the addition of the common prefixes and suffixes together to form a compound destination address, as recited in claim 1 and included in claim 9 via dependency. At best, the combination of Cidon, Johnson et al. and Alkhatib discloses a method of creating IP address packet headers, and routing tables that respond thereto, that use ANR labels to send a packet to a destination address of a node that is included in a predefined multicast tree, and then concatenating the ANR labels with a TMM tree label so that the packet is distributed within the predefined multicast tree. The combination of Cidon, Johnson et al. and Alkhatib fails to teach or suggest the detection of a common prefix in at least two different destination addresses. Instead, the combination of Cidon, Johnson et al. and Alkhatib discloses that automatic network routing (ANR) labels and a tree multicast mode (TMM) tree label are concatenated into the routing field of a packet. *See* Figure 6 of Cidon. There is no teaching of suggestion that the concatenated information in the routing field has been derived by a detection of a common prefix in at least two different destination addresses, as recited in claim 1 and included in claim 9 via dependency. As disclosed by the combination of Cidon, Johnson et al. and Alkhatib, for a tree multicast, each adapter has the identical address. *See* col. 6, lines 45-48 of Cidon. Moreover, the combination of Cidon, Johnson et al. and Alkhatib shows a whole series of ANR labels concatenated to the TMM tree label. See Figure 6 of Cidon. There is no teaching or suggestion in the combination of Cidon, Johnson et al. and Alkhatib of somehow compressing the ANR labels if a common prefix was present. Instead, the combination of Cidon, Johnson et al. and Alkhatib simply discloses concatenating all the ANR labels together.

*See* col. 7, lines 32-35 of Cidon. The Examiner has not identified any detailed teaching in the combination of Cidon, Johnson et al. and Alkhatib of the detection and compression of common prefixes.

In the combination ANR/TMM routing disclosed by the combination of Cidon, Johnson et al. and Alkhatib, there is no divergence in the route from the source node to the destination node that is included in a predefined TMM tree. Thus, there is no need to detect a common path to all the nodes of the multicast tree, since the packet only needs to be sent to only a selected destination node, which also happens to be part of the multicast tree. The multicast tree takes care of distributing the packet from the destination node (which first received the packet) to the remaining nodes that comprise the predefined multicast tree, which all have the same address. The Examiner makes the incorrect assumption that the predefined multicast tree disclosed by the combination of Cidon, Johnson et al. and Alkhatib is somehow equivalent to Applicants' invention of a compound address that distributes packets to multiple destination addresses. In Applicants' invention, the compound address represents a multitude of different destination addresses compressed together, whereas the predefined multicast tree relies upon a single common address for packet forwarding. The combination of Cidon, Johnson et al. and Alkhatib specifically teaches away from compression by concatenating several ANR labels to a TMM label. *See* Figure 6 of Cidon. Concatenation simply means to link together, as in a chain. The ANR labels in the packet header are linked together, which allows them to be stripped away as the packet progresses through the network. *See* col. 1, lines 39-43 of Cidon. There are no methods or algorithms disclosed in the combination of Cidon, Johnson et al. and Alkhatib that teach compressing the number of ANR labels in the packet header.

Otherwise, if the combination of Cidon, Johnson et al. and Alkhatib did actually teach compression, there would be some disclosure on how to uncompress the ANR labels and strip away used ANR labels as the packet progresses through the network.

In addition, the combination of Cidon, Johnson et al. and Alkhatib lacks any teaching or suggestion of generating a suffix list, as recited in claim 1 and included in claim 9 via dependency. Although the Examiner argues that the combination of Cidon, Johnson et al. and Alkhatib allegedly discloses multicasting to several destination addresses, it is clear that only one destination address receives the broadcast, i.e., the multicast tree address stored by the adapter. *See* col. 6, lines 45-48 of Cidon. This tree address is the tree address (64) shown in Figure 6 of Cidon. The combination of Cidon, Johnson et al. and Alkhatib fails to teach or suggest that a packet having a routing field as shown in Figure 6 of Cidon is delivered to *any other destination address* other than the tree address shown in Figure 6. There is no teaching or suggestion of generating a suffix list composed of multiple destination addresses, since the combination of Cidon, Johnson et al. and Alkhatib only multicasts to what is in essence a single destination address. For example, if two different destination addresses were part of two different multicast trees, the combination of Cidon, Johnson et al. and Alkhatib would require two different packets having routing labels composed of ANR labels and different TMM tree labels. In contrast, the present invention could send a packet to the two different destination addresses with a single packet due to the compound destination address.

The Examiner's argument that the TMM address be viewed as a series of suffixes is clearly wrong, especially since the combination of Cidon, Johnson et al. and Alkhatib explicitly states that TMM uses the same address for members of the predefined multicast tree. In contrast, claim 9

recites that the suffix list represents the non-identical portions of the destination addresses of hosts that have a common prefix in their destination addresses.

Finally, the combination of Cidon, Johnson et al. and Alkhatib fails to teach or suggest the addition of a common prefix to a generated suffix list, as recited in claim 1 and included in claim 9. Again, in the combination of Cidon, Johnson et al. and Alkhatib, the plurality of ANR labels is simply concatenated to the TMM tree label. *See* Figure 6 of Cidon. There is no disclosure that the TMM tree label is somehow equivalent to the generated suffix list, and there is no disclosure that the concatenated series of ANR labels is a common prefix, as recited in claim 1 and included in claim 9 via dependency. Therefore, Applicants believe that the Examiner has not met the "all limitations" prong of a *prima facie* case of obviousness, as required by *In re Vaeck.*

The Examiner has not made a proper showing of motivation, as required under *In re Dembiczak* and *In re Zurko.* The Examiner has acknowledged that Cidon does not disclose the use of IP addresses, but since Alkhatib does disclose IP addresses and routing tables, it would have been obvious to combine the two references. This reason is inadequate under *In re Dembiczak* and *In re Zurko.* The Examiner is obligated to provide particular findings related to its conclusion on motivation, and those findings must be clear and particular. A broad conclusionary statement, standing alone without support, is not "evidence." The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680 (Fed. Cir. 1990) (holding that, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so"); *see also In re Fritch,*

972 F.2d 1260 (Fed. Cir. 1992). The Examiner has cited nothing in either Cidon, Johnson et al. and Alkhatib that would provide any motivation to combine the three references, especially in light of the analysis regarding the "all limitations" prong of a *prima facie* case of obviousness, where Applicants have clearly shown that the combination of Cidon, Johnson et al. and Alkhatib does not teach or suggest all the recitations of claim 9. Applicants believe that the Examiner has not met the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Thus, Applicants believe that claim 9 is allowable over the combination of Cidon and Alkhatib, at least by virtue of its dependency from claim 1 and for the reasons discussed above.

5. Claims 11-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cidon in view of Srinivasan et al. (*Faster IP Lookups Using Controlled Prefix Expansion*). Applicants respectfully traverse the rejection of claims 11-13 at least for the reasons set forth below.

Claims 11-13 depend from claim 1, and therefore include all the recitations of claim 1 by virtue of their dependency.

For claims 11-13, the Examiner acknowledges that Cidon fails to disclose detecting octet/nibble/bit prefixes. The Examiner attempts to overcome the deficiencies of Cidon by combining it with Srinivasan et al. Applicants note that the Examiner has not cited Srinivasan et al. for any teaching of the detection of common prefixes, the generation of suffix lists and the addition of the common prefixes and suffix lists together to form a compound destination address, as recited in claim 1 and included in claims 11-13 via dependency.

The combination of Cidon and Srinivasan et al. fails to teach or suggest the detection of common prefixes, the generation of suffixes and the addition of the common prefixes and suffixes together to form a compound destination address, as recited in claim 1 and included in claims 11-13 via dependency. At best, the combination of Cidon and Srinivasan et al. discloses a method of creating packet headers for a connectionless network that use expanded ANR labels to send a packet to a destination address of a node that is included in a predefined multicast tree, and then concatenating the expanded ANR labels with a TMM tree label so that the packet is distributed within the predefined multicast tree. The combination of Cidon and Srinivasan et al. et al. fails to teach or suggest the detection of a common prefix in at least two different destination addresses. Instead, the combination of Cidon and Srinivasan et al. et al. discloses that automatic network routing (ANR) labels and a tree multicast mode (TMM) tree label are concatenated into the routing field of a packet. *See* Figure 6 of Cidon. There is no teaching of suggestion that the concatenated information in the routing field has been derived by a detection of a common prefix in at least two different destination addresses, as recited in claim 1 and included in claims 11-13 via dependency. As disclosed by the combination of Cidon and Srinivasan et al. et al., for a tree multicast, each adapter has the identical address. *See* col. 6, lines 45-48 of Cidon. Moreover, the combination of Cidon and Srinivasan et al. et al. shows a whole series of ANR labels concatenated to the TMM tree label. See Figure 6 of Cidon. There is no teaching or suggestion in the combination of Cidon and Srinivasan et al. et al. of somehow compressing the ANR labels if a common prefix was present. Instead, the combination of Cidon and Srinivasan et al. simply discloses concatenating all the ANR labels together. *See* col. 7, lines 32-35 of Cidon. The Examiner has not identified any detailed

teaching in the combination of Cidon and Srinivasan et al. of the detection and compression of common prefixes.

In the combination ANR/TMM routing disclosed by the combination of Cidon and Srinivasan et al., there is no divergence in the route from the source node to the destination node that is included in a predefined TMM tree. Thus, there is no need to detect a common path to all the nodes of the multicast tree, since the packet only needs to be sent to only a selected destination node, which also happens to be part of the multicast tree. The multicast tree takes care of distributing the packet from the destination node (which first received the packet) to the remaining nodes that comprise the predefined multicast tree, which all have the same address. The Examiner makes the incorrect assumption that the predefined multicast tree disclosed by the combination of Cidon and Srinivasan et al. is somehow equivalent to Applicants' invention of a compound address that distributes packets to multiple destination addresses. In Applicants' invention, the compound address represents a multitude of different destination addresses compressed together, whereas the predefined multicast tree relies upon a single common address for packet forwarding. The combination of Cidon and Srinivasan et al. specifically teaches away from compression by concatenating several ANR labels to a TMM label. *See* Figure 6 of Cidon. Concatenation simply means to link together, as in a chain. The ANR labels in the packet header are linked together, which allows them to be stripped away as the packet progresses through the network. *See* col. 1, lines 39-43 of Cidon. There are no methods or algorithms disclosed in the combination of Cidon and Srinivasan et al. that teach compressing the number of ANR labels in the packet header. Otherwise, if the combination of Cidon and Srinivasan et al. did actually teach compression, there

would be some disclosure on how to uncompress the ANR labels and strip away used ANR labels as the packet progresses through the network.

In addition, the combination of Cidon and Srinivasan et al. lacks any teaching or suggestion of generating a suffix list, as recited in claim 1 and included in claims 11-13. Although the Examiner argues that the combination of Cidon and Srinivasan et al. allegedly discloses multicasting to several destination addresses, it is clear that only one destination address receives the broadcast, i.e., the multicast tree address stored by the adapter. *See* col. 6, lines 45-48 of Cidon. This tree address is the tree address (64) shown in Figure 6 of Cidon. The combination of Cidon and Srinivasan et al. fails to teach or suggest that a packet having a routing field as shown in Figure 6 of Cidon is delivered to *any other destination address* other than the tree address shown in Figure 6. There is no teaching or suggestion of generating a suffix list composed of multiple destination addresses, since the combination of Cidon and Srinivasan et al. only multicasts to what is in essence a single destination address. For example, if two different destination addresses were part of two different multicast trees, the combination of Cidon and Srinivasan et al. would require two different packets having routing labels composed of ANR labels and different TMM tree labels. In contrast, the present invention could send a packet to the two different destination addresses with a single packet due to the compound destination address.

The Examiner's argument that the TMM address be viewed as a series of suffixes is clearly wrong, especially since the combination of Cidon and Srinivasan et al. explicitly states that TMM uses the same address for members of the predefined multicast tree. In contrast, claim 1 recites that

the suffix list represents the non-identical portions of the destination addresses of hosts that have a common prefix in their destination addresses.

Finally, the combination of Cidon and Srinivasan et al. fails to teach or suggest the addition of a common prefix to a generated suffix list, as recited in claim 1 and included in claims 11-13. Again, in the combination of Cidon and Srinivasan et al., the plurality of ANR labels is simply concatenated to the TMM tree label. *See* Figure 6 of Cidon. There is no disclosure that the TMM tree label is somehow equivalent to the generated suffix list, and there is no disclosure that the concatenated series of ANR labels is a common prefix, as recited in claim 1 and included in claims 11-13 via dependency. Therefore, Applicants believe that the Examiner has not met the "all limitations" prong of a *prima facie* case of obviousness, as required by *In re Vaeck.*

The Examiner has not made a proper showing of motivation, as required under *In re Dembiczak* and *In re Zurko.* The Examiner has acknowledged that Cidon does not disclose octet/nibble/bit prefixes, but since Srinivasan et al. do disclose such prefixes, it would have been obvious to combine. This reason is inadequate under *In re Dembiczak* and *In re Zurko.* The Examiner is obligated to provide particular findings related to its conclusion on motivation, and those findings must be clear and particular. A broad conclusionary statement, standing alone without support, is not "evidence." The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680 (Fed. Cir. 1990) (holding that, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so"); *see also In re Fritch*, 972 F.2d 1260 (Fed. Cir.

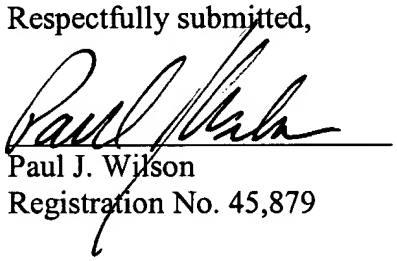
1992). The Examiner has cited nothing in either reference that would provide any motivation to combine the two references, especially in light of the analysis regarding the "all limitations" prong of a *prima facie* case of obviousness, where Applicants have clearly shown that the combination of Cidon and Srinivasan et al. does not teach or suggest all the recitations of claims 11-13. Applicants believe that the Examiner has not met the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Thus, Applicants believe that claims 11-13 are allowable over the combination of Cidon and Srinivasan et al., at least by virtue of their dependency from claim 1 and for the reasons discussed above.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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